

CLAIMS

What is claimed is:

- 5 1. An electrically powered bicycle, comprising:
- a rear fork assembly including a pair of structures extending from a frame;
- a wheel attached between the structures of the rear fork assembly;
- an electric motor mounted adjacent to the wheel; and
- a drive mechanism disposed between the electric motor and the wheel, wherein the drive
- 10 mechanism comprises:
- a first gear connected to a shaft of the electric motor and comprising a first plurality
- of teeth;
- a second gear connected to the wheel and comprising a second plurality of teeth; and
- wherein the teeth of the first gear are meshed with the teeth of the second gear such
- 15 that when the shaft of the electric motor turns, the second gear provides a
- rotating force to the wheel.

2. The electrically powered bicycle as recited in claim 1, wherein the electric motor is mounted between an inner surface of one of the structures of the rear fork assembly and the wheel.

3. The electrically powered bicycle as recited in claim 1, further comprising a seat tube extending
5 from an upper surface of the main frame tube.

4. The electrically powered bicycle as recited in claim 3, wherein each of the pair of structures of the rear fork assembly comprises:

a wheel mounting bracket positioned below the main frame tube;

10 a first tube extending from the seat tube to the wheel mounting bracket; and

a second tube extending from a central portion of the main frame tube to the wheel mounting bracket.

5. The electrically powered bicycle as recited in claim 1, wherein the electric motor comprises a
15 permanent magnet direct current motor having a disc-shaped rotor.

6. The electrically powered bicycle as recited in claim 1, wherein the electric motor has a diameter and a thickness, and wherein the diameter is greater than the thickness.

20 7. The electrically powered bicycle as recited in claim 1, wherein the frame comprises a main frame tube, and wherein the pair of structures of the rear fork assembly extend from opposite sides of a rear portion of the main frame tube.

8. The electrically powered bicycle as recited in claim 1, further comprising:

25 a momentary pushbutton switch;

a battery; and

a control unit electrically connected to the electric motor, to the battery, and to the

momentary pushbutton switch, and configured to provide electrical power from the

battery to the electric motor dependent upon a number of times the momentary

30 pushbutton switch is pressed and released within a predetermined period of time.

9. The electrically powered bicycle as recited in claim 8, wherein the predetermined period of time begins when the momentary pushbutton switch is pressed and released a first time.

5 10. The electrically powered bicycle as recited in claim 9, wherein when the momentary pushbutton switch is pressed and released the first time, and is not pressed and released again during the predetermined period of time, the control unit provides electrical power from the battery to the electric motor such that the electric motor is turned on and off rapidly.

10 11. The electrically powered bicycle as recited in claim 10, wherein the control unit provides electrical power from the battery to the electric motor such that the electric motor is turned on for a first period of time and subsequently off for a second period of time, and wherein the first and second periods of time are substantially equal.

15 12. The electrically powered bicycle as recited in claim 9, wherein when the momentary pushbutton switch is pressed and released the first time, then pressed and released again during the predetermined period of time, the control unit provides electrical power from the battery to the electric motor such that the electric motor is on continuously.

20 13. The electrically powered bicycle as recited in claim 8, wherein the frame comprises a main frame tube, and wherein the battery and the control unit are located within the main frame tube.

14. An electrically powered bicycle, comprising:

an electric motor coupled to a wheel such that when a shaft of the electric motor turns, a rotating force is provided to the wheel;

a momentary pushbutton switch;

5 a battery;

a control unit electrically connected to the electric motor, to the battery, and to the momentary pushbutton switch, and configured to provide electrical power from the battery to the electric motor dependent upon a number of times the momentary pushbutton switch is pressed and released within a predetermined period of time.

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15. The electrically powered bicycle as recited in claim 14, wherein the electric motor is coupled to the wheel via a drive mechanism comprising:

a first gear connected to a shaft of the electric motor and comprising a first plurality of teeth;

a second gear connected to the wheel and comprising a second plurality of teeth; and

5 wherein the teeth of the first gear are meshed with the teeth of the second gear such that

when the shaft of the electric motor turns, the second gear provides the rotating force to the wheel.

16. The electrically powered bicycle as recited in claim 14, further comprising a frame having a
10 main frame tube, and wherein the battery and the control unit are located within the main frame tube.

17. An electrically powered bicycle, comprising:

a frame having a front portion and a rear portion;

a rear fork assembly including a pair of structures extending from the rear portion of the frame;

5 a rear wheel attached between the structures of the rear fork assembly;

an electric motor coupled to the rear wheel such that when a shaft of the electric motor turns, a rotating force is provided to the rear wheel;

a front fork assembly rotatably mounted to the front portion of the frame;

a front wheel connected to the front fork assembly; and

10 a handlebar tube having a handlebar connected thereto, wherein the handlebar tube is removably connected to an upper portion of the front fork assembly via a quick release clamp.

18. The electrically powered bicycle as recited in claim 17, wherein the quick release clamp

15 comprises a cam structure that tightens the quick release clamp when rotated in one direction and loosens the quick release clamp when rotated in an opposite direction.

19. The electrically powered bicycle as recited in claim 17, wherein the electric motor is coupled to the rear wheel via a drive mechanism comprising:

20 a first gear connected to a shaft of the electric motor and comprising a first plurality of teeth; a second gear connected to the rear wheel and comprising a second plurality of teeth; and wherein the teeth of the first gear are meshed with the teeth of the second gear such that when the shaft of the electric motor turns, the second gear provides the rotating force to the rear wheel.

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18. The electrically powered bicycle as recited in claim 17, further comprising a foot rest tube connected to the front portion of the frame such that ends of the foot rest tube extend outwardly.